UNITED NATIONS

UNFCCC Framework Convention on Climate Change

Distr.
GENERAL

FCCC/SBSTA/2002/INF.4
16 May 2002

ENGLISH ONLY

SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE
Sixteenth session
Bonn, 5–14 June 2002
Item 3 of the provisional agenda

THIRD ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

Report of the workshop on the Third Assessment Report

Note by the secretariat

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I. INTRODUCTION

A. Mandate

1. The Conference of the Parties (COP), by its decision 25/CP.7, expressed its appreciation and gratitude to the Intergovernmental Panel on Climate Change (IPCC), particularly its Chairman and all its authors and scientists, for their excellent work in preparing the Third Assessment Report (TAR), and encouraged the IPCC to continue its work, including, *inter alia*, preparation of the Fourth Assessment Report. It also encouraged Parties to make full use of the information contained in the Third Assessment Report.

2. At its fifteenth session, the Subsidiary Body for Scientific and Technological Advice (SBSTA) requested the secretariat: (i) to organize, prior to the sixteenth session of the SBSTA, a workshop to explore the information contained in the TAR and how the content of the TAR can facilitate the work of the SBSTA and the other Convention bodies relating to climate change, research and systematic observation, scientific uncertainty, impacts of climate change and adaptation to climate change, effects of measures, innovative technology development, methodological issues, and other matters contained in the TAR, under the guidance of the Chairman of the SBSTA and with participation from experts identified by the IPCC; and (ii) to prepare a report on that workshop for consideration by the SBSTA at its sixteenth session (FCCC/SBSTA/2001/8, para. 12 (d)).

3. The SBSTA also invited Parties to provide their views for compilation in a miscellaneous document on: (i) the information contained in the TAR; and (ii) possible IPCC activities in support of the needs of the Convention and its Kyoto Protocol (FCCC/SBSTA/2001/8, para. 12 (c)). The SBSTA decided to consider, at its sixteenth session, the report on the workshop referred to above and the information contained in the submissions (FCCC/SBSTA/2001/8, para. 12 (e)).

B. Scope of the note

4. This report provides information on the workshop organized by the secretariat in response to the above mandate. Submissions from Parties are contained in document FCCC/SBSTA/2002/MISC.5.

C. Possible action by the SBSTA

5. The SBSTA may wish to take note of the information contained in this report, identify matters for further consideration and agree on further action. It may also wish to call relevant issues to the attention of the Subsidiary Body for Implementation (SBI).

II. PROCEEDINGS

6. The UNFCCC workshop on the IPCC Third Assessment Report was organized by the secretariat in Bonn, Germany, from 4 to 6 April 2002 with support from the Governments of Canada and Germany. Seventy-four participants took part in the workshop. The participants included 54 representatives from 39 Parties (including 23 participants from developing countries and countries with economies in transition), 12 experts identified by the IPCC and 8 representatives from international and non-governmental organizations. The agenda of the workshop is contained in annex I to this document. The workshop was chaired by the Chairman of the SBSTA, Mr. Halldor Thorgeirsson. Participants had available documents FCCC/SBSTA/2001/INF.6 on the Third Assessment Report of the IPCC and FCCC/SBSTA/2002/MISC.5.

7. Information contained in the TAR was considered under two general headings: "risk analysis" and "risk management". Two panel sessions were held on the first day. The panel on risk analysis considered aspects of the scientific basis of climate change from the IPCC Working Group I report, such

as changes in atmospheric chemistry, long-term emission scenarios, detection, attribution and prediction of climate change, and observing global climate variability and change. This panel also discussed the information on the impacts of climate change contained in the IPCC Working Group II report. The panel on risk management considered adaptation to climate change from the Working Group II report, and information on effects of mitigation measures and innovative technologies from the Working Group III report. Scientific uncertainty, methodologies and research were explored in the context of both risk analysis and risk management.

8. Mr. Robert Watson, Chairman of the IPCC, made an introductory presentation on the TAR and moderated discussions in each panel. IPCC experts presented a summary of TAR findings, associated uncertainties, methodological issues and needs for further research.[1] Several experts also commented on how information contained in the TAR could assist future work of the SBSTA. The presentations were followed by an exchange of views between representatives of the Parties, organizations and the IPCC experts.

9. On the second day the participants explored how the information in the TAR could facilitate the work of the SBSTA and other Convention bodies. Two short presentations by the UNFCCC secretariat provided an overview of the provisional agendas of the sixteenth sessions of the SBSTA and the SBI and highlighted some issues of relevance. These presentations were followed by a general discussion. Based on the discussions, a list of topics of relevance to the work of the SBSTA and other Convention bodies was drawn up (see annex II). The participants at the workshop explored only a small amount of the information contained in the TAR because of the limited time.

III. WORKSHOP SUMMARY

10. The Chairman noted the exploratory nature of the workshop and, following an initial exchange of views among the participants, identified a list of topics for further discussion that might facilitate the work of the SBSTA and other Convention bodies, including: issues related to the scientific basis of climate change, scientific uncertainty, research and systematic observation, impacts and adaptation, effects of measures, development of innovative technology, methodological issues, and other matters. Further consideration of the TAR by the SBSTA was also discussed.

11. The following summary outlines the main issues discussed and the wide variety of views expressed. It is not intended to be a comprehensive account of the views of all participants.

A. Climate change

12. The discussion under this general topic focused on the scientific issues related to the Convention, including its ultimate objective.

13. As explored at the workshop, the TAR provides new scientific information and evidence regarding, inter alia, future concentrations of greenhouse gases (GHGs) in the atmosphere, future climate change, biophysical and socio-economic impacts of climate change at different levels of GHG concentration, and the technical and economic potential for achieving different levels of GHG concentrations, which can contribute to defining "dangerous anthropogenic interference with the climate system". At the same time, the TAR indicates that such conclusions involve value judgements determined through socio-political processes. These value judgements are to be based on available scientific information, and should include such considerations as development, equity, sustainability, and

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[1] Presentations made at the workshop by the IPCC experts can be found at http://unfccc.int/sessions/workshop/040402/index.html

local adaptive and mitigative capacities, as well as uncertainties and risk.[2] Participants expressed different views on whether the scientific information presented in the TAR is sufficient for making decisions on what constitutes "dangerous anthropogenic interference" with the climate system and underlined that all the elements of Article 2 of the Convention need to be considered together.

14. All participants agreed that further research is needed to improve understanding and reduce uncertainties on the matters related to the "dangerous anthropogenic interference" and "critical thresholds" of GHG concentration in the atmosphere. Research in the following areas was considered to be important: sensitivity of the climate system; climate forcing due to natural factors and anthropogenic aerosols; socio-economic and biophysical impacts; the critical thresholds of GHG concentration in the atmosphere; and the technological feasibility of preventing critical thresholds from being surpassed.

Possible future work of the SBSTA

15. Some participants suggested that, although some of the scientific information in the TAR is uncertain, it is sufficient to start a process of translating the scientific assessment into policy responses. It was suggested that the SBSTA should include a separate item in its agenda relating to the consideration of what constitutes "dangerous anthropogenic interference" and how to prevent it. It was noted that such a debate should include consideration of critical thresholds, criteria, and the timetable needed to avoid "dangerous anthropogenic interference". Other participants expressed the view that the scientific information in the TAR relating to the term "dangerous anthropogenic interference" is not robust enough to provide a sound basis for making judgements at a political level. They argued that such discussions in the SBSTA would not be productive, and that the subject requires further scientific study.

B. Scientific uncertainty

16. The participants exchanged views on the general topic of scientific uncertainty and also explored the issue of scientific uncertainty in the context of each topic. It was noted that some of the uncertainties identified in the TAR are associated with quantitative information on the magnitude and timing of climate changes and responses, especially at a regional level, rather than qualitative differences which would fundamentally change the conclusions drawn from the report. Participants also acknowledged that climate change policy decisions under general uncertainty are based on risk assessment. They noted the importance of exploring and identifying methodologies that can facilitate risk assessment and risk management, including both cost-benefit analysis of impacts and mitigation and other approaches to assess non-monetary criteria. Inherent limitations of cost-benefit analysis as a basis for climate change policy-making were also noted by participants.

17. Some participants also stressed the importance of considering findings which were identified as robust, referring to table SPM-3 of the Synthesis Report of the TAR, since these findings, in their view, represented a sound basis for further work of the SBSTA.

Possible future work of the SBSTA

18. Some participants suggested that the SBSTA should explore how to consider uncertainties and the robust findings in the TAR. They pointed out that work is needed to identify priority areas where reducing uncertainties are crucial for the policy-making process. An expert meeting to explore different aspects of the general issue of uncertainty was seen by some participants as a useful means to advance the issue under the SBSTA.

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[2] For more information see *Climate change 2001. Synthesis report. Contribution of working groups I, II and III to the Third Assessment Report of the Intergovernmental Panel on Climate Change, pp. 2-4 and pp. 37-43.*

C. Research and systematic observation

19. Several participants noted that the SBSTA should be involved in coordinating research priorities and encouraging research relating to climate change science, taking into account the gaps identified in the TAR. Increase in funding of research programmes and improving local research capacities were viewed as critical for providing better information for decision-making in the future.

20. Participants also noted the importance of systematic observation and in particular, of a global climate observing system, for advancing scientific knowledge, assessing global and regional climate changes, and projecting the magnitude, timing and future effects of climate change. Some participants also suggested that consideration of additional funding to support observations might be needed. Others recalled decision 2/CP.4 and argued that the Global Environment Facility has been given the mandate to provide financial support to build capacity for participation in systematic observational networks to reduce scientific uncertainties in accordance with Article 5 of the Convention.

Possible future work of the SBSTA

21. Decision 5/CP.5 on research and systematic observation was recalled. Participants noted that the SBSTA should continue its efforts to encourage Parties to address deficiencies and strengthen observational networks in the global climate observing system, as well as to promote international cooperation (through the World Climate Research Programme and the Global Climate Observing System (GCOS)), particularly in developing countries. The importance of encouraging regional cooperation, and the exchange of data in accordance with Article 4 of the Convention was acknowledged in this regard.

D. Impacts and adaptation

22. It was noted that all emission scenarios studied in the TAR result in changes in climate. Adaptation is therefore no longer an option but a necessity. The participants further acknowledged that the TAR provides important information on impacts, vulnerability and adaptation, and methodological approaches for assessing the impacts of and vulnerability to climate change. Some participants noted the need to update the IPCC information on methods to assess climate change impacts and adaptation.

23. Participants stressed that vulnerability and adaptation assessments, the associated exchange of information and the ability to apply impact and adaptation methods are issues for all Parties, but are particularly important to developing countries at both regional and country level. They generally concurred with the findings in the TAR that the enhancement of capacities to adapt to current climate variability and extremes is necessary to reduce vulnerability in the long term, and that the socio-economic and technological characteristics of different development paths will affect the capacity to adapt. It was also emphasized that adaptation measures were likely to be successfully implemented if they were consistent with sustainable development goals.

24. Participants recalled the conclusion of the TAR that a combination of mitigation and adaptation could be needed to reduce adverse effects of climate change. They noted that strategies which enhance the capacity to mitigate should also be effective in enhancing the capacity to adapt. In this regard, there is a need to explore common strategies to mitigate and adapt with a goal of reducing costs and enhancing capacities.

Possible future work of the SBSTA

25. The participants recalled decision 5/CP.7 on implementation of Article 4.8 and 4.9 of the Convention, and the conclusions of the SBSTA on methods and tools to assess impacts and adaptation (FCCC/SBSTA/2001/8, para. 23). They noted that the SBSTA should continue addressing methods and tools to assess impacts and adaptation, and their dissemination, taking into account the TAR.

Participants expressed the view that the SBSTA should consider action to assist the scientific community in developing better risk-analysis and impact-assessment tools. Several participants noted that the SBSTA could encourage further action to enhance the exchange of information among all Parties relating to their current programmes to reduce vulnerability and adapt to climate variability and climate change.

26. Participants also suggested that the SBSTA could play an important role in formulating research priorities in the area of the assessment of climate change impacts, vulnerability and adaptation, interacting with the scientific community. The following scientific topics were mentioned as possible examples of such priorities: risk reduction under different development pathways and mitigation strategies; the implications of climate change in the context of other pressures on natural resources such as water management; impacts of climate change on human health; the likelihood of extreme events in the context of climate change and possible adaptation to the extremes; technologies to adapt to climate change and the cost of adaptation options; criteria for evaluation of adaptation and adaptive capacities.

E. Effects of measures

27. The participants noted that the IPCC had identified a set of criteria used by countries to identify and implement policies and measures. Environmental effectiveness was viewed as a very important criterion in developing national climate change strategies but it was also acknowledged that economic efficiency was at least equally important.

28. It was also noted that the TAR suggests that even measures which had the highest ranking as a result of cost-benefit analysis were not necessarily implemented due to a number of implementation barriers. Participants acknowledged the need for further work to find innovative approaches to reduce these barriers, taking into account the time delay between implementation of policies and the effects on emissions and on the climate. Participants noted that policies should aim to avoid economic and emission pathways that are difficult to change and which may be costly.

29. The participants noted that energy prices have a significant impact on emission trends, and the environmental effectiveness and economic efficiency of policies and measures. Further analysis of the effects of energy prices on measures and analysis of possible market distortions was seen as one of the priority issues for consideration by the IPCC.

30. Another theme of the discussion was the need for the countries to find the most appropriate portfolio of options and policies in their national strategies to mitigate climate change. It was recognized that an optimal portfolio of policies and measures is a country-specific matter, but that further work by the IPCC to define the concept of optimal portfolios could help countries in assessing policies and measures.

31. The spillover effects of national policies on other countries were also discussed. These could be positive or negative. The participants noted that decision 5/CP.7 provides a framework for additional work in the area of the adverse impacts of response measures.

Possible future work of the SBSTA

32. Gaps in the methodology to assess the effects of policies and measures, and in particular their cost and benefit were noted. In this context, a need for further sharing of methodological information in the framework of the SBSTA process was acknowledged by a number of participants as possible future action.

F. Innovative technology development

33. The participants stressed the importance of developing new mitigation and adaptation technologies in order to achieve the ultimate objective of the Convention. Participants also recalled

Article 4.5 of the Convention and related decision 4/CP.7, which provides a framework for implementing this article.

34. It was also noted that many options for government action were identified in the TAR. For example, it was noted that there are opportunities and barriers related to capital stock turnover and technological diffusion rates. The long lifetimes of operation of some technologies cause the stock of installed capacity to change slowly. Retiring technology before the end of its operational life increases costs, while on the other hand, installing the most efficient technologies may have multiple benefits. Additional studies and consideration of this issue are needed.

35. The access to technologies and intellectual property rights was mentioned as an issue of concern for many developing counties.

Possible future work of the SBSTA

36. Investment in research and development of technologies to mitigate and adapt to climate change was mentioned by a number of participants as a critical issue. Several participants suggested that the SBSTA may wish to investigate current investment patterns as a next step.

G. Methodological issues

37. Issues related to methodologies were explored under most of the above topics. Two additional issues were brought up by the participants under this heading. First, participants noted the new information provided in the TAR regarding new pollutants which affect the radiative balance, or "greenhouse agents".[3] This information may provide a basis for consideration of whether the basket of gases listed in the Kyoto Protocol for the second commitment period should be expanded to include particulates, such as black carbon, and ozone precursors.

38. Another issue relates to the information contained in the TAR on updated global warming potentials for a number of GHGs. Some participants noted that the information may have implications for future mitigation strategies as well as for the UNFCCC reporting guidelines for GHG inventories, although some additional assessment of those possible implications may be necessary in order to make an informed decision.

Possible future work of the SBSTA

39. No specific suggestions for future work by the SBSTA on this matter were made at the workshop.

H. Other matters

40. Many participants touched upon the issue of public awareness and the issue of capacity-building as related to the IPCC. The conclusions of the SBSTA on the TAR (FCCC/SBSTA/2001/8, para. 12) and on Article 6 of the Convention: education, training and public awareness (FCCC/SBSTA/2001/8, para. 45) were recalled. In particular, participants highlighted the importance of disseminating the results of the TAR in the context of Article 6 of the Convention. The role of other international and United Nations organizations was emphasized in this regard.

41. The need to increase the number of developing country experts in all IPCC activities and to consider more scientific literature in languages other than English was acknowledged by the participants.

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[3] While term "greenhouse agents" was suggested by participants, the secretariat believes that the more appropriate scientific term is "forcing agents".

I. Consideration of the Third Assessment Report by the SBSTA

42. The workshop participants expressed a range of views related to further consideration of the TAR by the SBSTA.

43. Some participants noted that the TAR contains information with broad implications for the possible work of the SBSTA over the next few years. Therefore they considered it useful to have the TAR as a regular item on the agenda of the SBSTA with a work plan, which, inter alia, would aim to:

(a) Further consider implications of the TAR for the work of the SBSTA and other Convention bodies. It was noted that a number of the SBSTA (and possibly SBI) agenda items could be re-examined to better reflect related TAR findings, with the implication of changing the respective work plans. The SBSTA may wish to look for new items, for example those related to Article 2 of the Convention;

(b) Identify research issues and priorities for further research by the scientific community based on the analysis of uncertainties and research gaps in different areas;

(c) Identify key policy-relevant questions in advance of the IPCC Fourth Assessment Report. These questions should not prescribe the IPCC process, but rather provide guidance on what kind of information to look for in the literature assessments. This proposed activity was welcomed by the representatives and experts of the IPCC.

44. Some participants argued that consideration of policy implications arising from the TAR falls outside the mandate of the SBSTA. They suggested limiting consideration of the TAR to issues such as (a) scientific uncertainty of the assessments in the TAR; (b) issues related to technology transfer; and (c) issues relating to ways and means of supporting indigenous capacity-building in developing countries.

Annex I

WORKSHOP AGENDA

Day 1: Thursday, 4 April 2002

09.00 – 09.30 Registration

09.30 – 10.00 **WELCOME, OPENING AND INTRODUCTION**

Welcome
Mr. R. Kinley, UNFCCC secretariat

Objectives, focus and procedure of the workshop
Mr. H. Thorgeirsson, Chairman of the SBSTA

IPCC TAR – Introduction
Mr. R. Watson, Chairman of the IPCC

10.00 – 11.15 **PANEL I. THE IPCC TAR ON "RISK ANALYSIS"**
Issues related to climate change, systematic observation, impacts of climate change, including related uncertainties, methodologies and research

Moderator: Mr. R. Watson, Chairman of the IPCC

Panelists: Atmospheric chemistry: GHG and precursors
Mr. M. Prather, Coordinating Lead Author (CLA) of IPCC

Observing global climate variability and change
Mr. T. Karl, CLA of IPCC

Long-term GHG emission scenarios
Mr. N. Nakicenovic, CLA of IPCC

Climate change: attribution and scenarios
Mr. J.F.B. Mitchel, CLA of IPCC

Impact of climate change
Mr. M. Parry, CLA of IPCC, Mr. S. Cohen, CLA of IPCC

11.15 – 11.30 Coffee break

11.30 – 13.00 **GENERAL DISCUSSION ON "RISK ANALYSIS"**
Statements/questions/exchange of views among the workshop participants and the panel members

13.00 – 14.30 Lunch

14.30 – 16.00 **PANEL II. THE IPCC TAR ON "RISK MANAGEMENT"**
Issues related to adaptation, the effect of measures, and innovative technology development, including related uncertainties, methodologies and research

Moderator: Mr. R. Watson, Chairman of the IPCC

Panelists: Adaptation to climate change
Mr. T. Downing, CLA of IPCC

Mitigation. Introduction
Mr. B. Metz, Co-Chair of WGIII IPCC TAR

Effects of measures
Mr. C. Jepma, Lead Author (LA) of IPCC and
Mr. J. Sathaye, CLA of IPCC

Innovative technology development
Mr. J. Moreira, CLA of IPCC;
Mr. R. Swart, Head of Technical Support Unit (TSU) WGIII of IPCC;
and Mr. N. Nakicenovic, CLA of IPCC

16.00 – 16.15 Coffee break

16.15 – 18.30 **GENERAL DISCUSSION ON "RISK MANAGEMENT"**
Statements/questions/exchange of views among the workshop participants and the panel members

19.00 Get-together. Canteen of Haus Carstanjen

Day 2: Friday, 5 April 2002

09.30 – 11.15 **PLENARY SESSION**
General discussion. How can the content of the TAR facilitate the work of the SBSTA and other Convention bodies?

Overview of the agenda of the sixteenth session of the SBSTA.
Some issues of relevance
Ms. H. Hoffmann, UNFCCC secretariat

Overview of the agenda of the sixteenth session of the SBI.
Some issues of relevance
Mr. V. Matsarski, UNFCCC secretariat

Discussion

11.15 – 11.30 Coffee break

11.30 – 19.00 PLENARY SESSION (continued)
How can the content of the TAR facilitate the work of the SBSTA and other Convention bodies?

Discussion

Day 3: Saturday, 6 April 2002

08.30 – 13.00 PLENARY SESSION (continued)
How can the content of the TAR facilitate the work of the SBSTA and other Convention bodies?

Discussion

Concluding remarks

Annex II

TOPICS OF RELEVANCE TO THE WORK OF THE SBSTA AND OTHER CONVENTION BODIES IDENTIFIED AT THE WORKSHOP

Issues related to the scientific basis of climate change

- Ultimate objective of the Convention – scientific basis
- Critical thresholds of GHG concentration in the atmosphere

Scientific uncertainty

- Addressing key uncertainties and robust findings of the TAR
- Risk implications
- Regional dimensions
- Sequential decision-making in the face of uncertainties

Research and systematic observation

- Funding of research
- Coordination of research
- Strengthening of observation networks
- Regional focus
- Data exchange

Impacts and adaptation

- Linkage to decision 5/CP.7 and work on methods and tools of the SBSTA
- Regional and national analysis
- Likelihood of extreme events
- Increased focus on adaptation measures
- Costing of impacts and adaptation options
- Importance of development paths
- Implication on natural resource and water management
- Methodologies and tools for impacts and adaptation analysis

Effects of measures

- Sustainable development context (link to Article 2)
- Benefits of mitigation measures
- Cost of mitigation measures
- Spillover effect of response measures
- Effectiveness of measures to implement Kyoto Protocol
- Options to overcome barriers to implementation
- Time frame for changes in technologies
- Development of national strategies
- Market distortions

- Link to national communications

Innovative technology development

- Research and development investment
- Capital stocks turnover and technology diffusion rate
- Link to decision 4/CP.7 Framework for implementation of Article 4.5 of the Convention
- Access to technologies and intellectual property rights
- Adaptation technology development
- Technology potential in the context of Article 2
- Stimulation of innovation

Methodological issues

- Radiative forcing of gases and aerosols not covered by the Kyoto Protocol
- Updated global warming potentials

Other matters

- Link to Article 6 of the Convention: education, training and public awareness
- Capacity-building